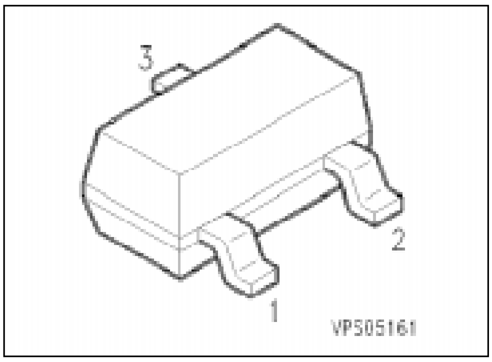
SIEMENS

PNP Silicon Switching Transistors

BSS 80
BSS 82

- High DC current gain
- Low collector-emitter saturation voltage
- Complementary types: BSS 79, BSS 81 (NPN)



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1	2	3	Package[1)]
BSS 80 B	CHs	Q62702-S557	B	E	C	SOT-23
BSS 80 C	CJs	Q62702-S492				
BSS 82 B	CLs	Q62702-S560				
BSS 82 C	CMs	Q62702-S482				

Maximum Ratings

Parameter	Symbol	Values BSS 80	BSS 82	Unit
Collector-emitter voltage	V_{CE0}	40	60	V
Collector-base voltage	V_{CB0}	60		
Emitter-base voltage	V_{EB0}	5		
Collector current	I_C	800		mA
Peak collector current	I_{CM}	1		A
Base current	I_B	100		mA
Peak base current	I_{BM}	200		
Total power dissipation, $T_S = 77$ ˚C	P_{tot}	330		mW
Junction temperature	T_j	150		˚C
Storage temperature range	T_{stg}	– 65 … + 150		

Thermal Resistance

Junction - ambient[2)]	$R_{th\ JA}$	≤ 290	K/W
Junction - soldering point	$R_{th\ JS}$	≤ 220	

1) For detailed information see chapter Package Outlines.
2) Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm^2 Cu.

Electrical Characteristics
at T_A = 25 ˚C, unless otherwise specified.

Parameter		Symbol	Values			Unit
			min.	typ.	max.	
DC characteristics						
Collector-emitter breakdown voltage		$V_{(BR)CE0}$				V
I_C = 10 mA	BSS 80		40	–	–	
	BSS 82		60	–	–	
Collector-base breakdown voltage I_C = 10 µA		$V_{(BR)CB0}$	60	–	–	
Emitter-base breakdown voltage I_E = 10 µA		$V_{(BR)EB0}$	5	–	–	
Collector-base cutoff current		I_{CB0}				
V_{CB} = 50 V			–	–	10	nA
V_{CB} = 50 V, T_A = 150 ˚C			–	–	10	µA
Emitter-base cutoff current V_{EB} = 3 V		I_{EB0}	–	–	10	nA
DC current gain		h_{FE}				–
I_C = 100 µA, V_{CE} = 10 V	BSS 80 B/82 B		40	–	–	
	BSS 80 C/82 C		75	–	–	
I_C = 1 mA, V_{CE} = 10 V	BSS 80 B/82 B		40	–	–	
	BSS 80 C/82 C		100	–	–	
I_C = 10 mA, V_{CE} = 10 V[1]	BSS 80 B/82 B		40	–	–	
	BSS 80 C/82 C		100	–	–	
I_C = 150 mA, V_{CE} = 10 V[1]	BSS 80 B/82 B		40	–	120	
	BSS 80 C/82 C		100	–	300	
I_C = 500 mA, V_{CE} = 10 V[1]	BSS 80 B/82 B		40	–	–	
	BSS 80 C/82 C		50	–	–	
Collector-emitter saturation voltage[1]		V_{CEsat}				V
I_C = 150 mA, I_B = 15 mA			–	–	0.4	
I_C = 500 mA, I_B = 50 mA			–	–	1.6	
Base-emitter saturation voltage[1]		V_{BEsat}				
I_C = 150 mA, I_B = 15 mA			–	–	1.3	
I_C = 500 mA, I_B = 50 mA			–	–	2.6	

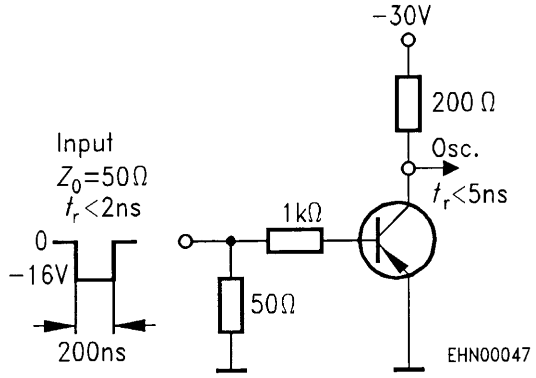
[1] Pulse test conditions: $t \leq 300$ µs, D = 2 %.

Electrical Characteristics
at T_A = 25 ˚C, unless otherwise specified.

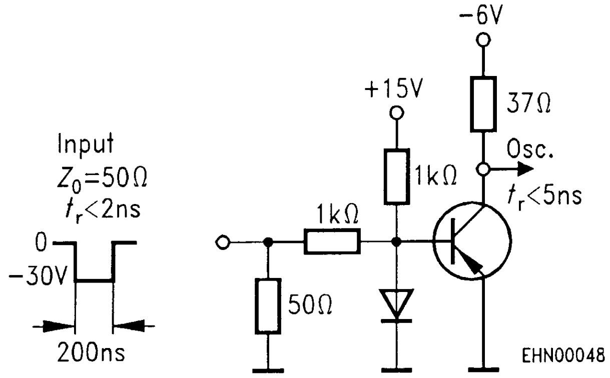
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC characteristics					
Transition frequency I_C = 20 mA, V_{CE} = 20 V, f = 100 MHz	f_T	–	250	–	MHz
Open-circuit output capacitance V_{CB} = 10 V, f = 1 MHz	C_{obo}	–	6	–	pF
V_{CC} = 30 V, I_C = 150 mA, I_{B1} = 150 mA Delay time Rise time V_{CC} = 6 V, I_C = 150 mA, I_{B1} = I_{B2} = 15 mA Storage time Fall time	 t_d t_r t_{stg} t_f	 – – – –	 – – – –	 10 40 80 30	 ns ns ns ns

Test circuits

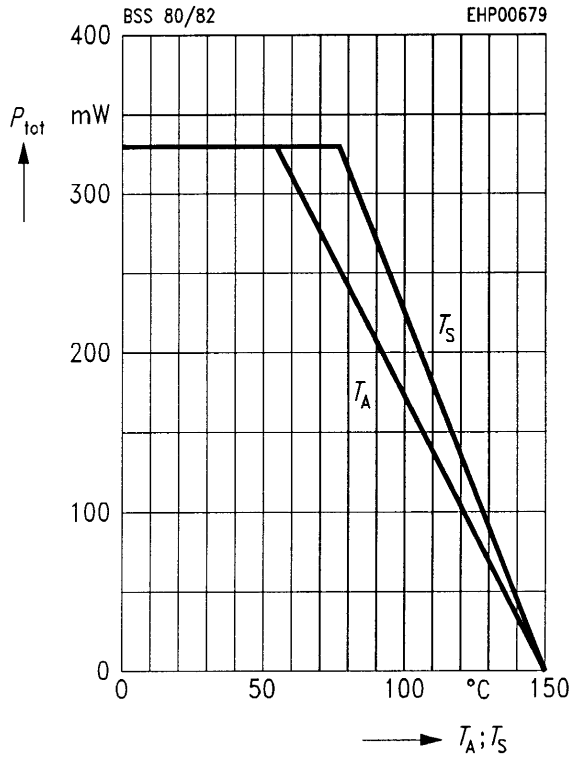
Delay and rise time



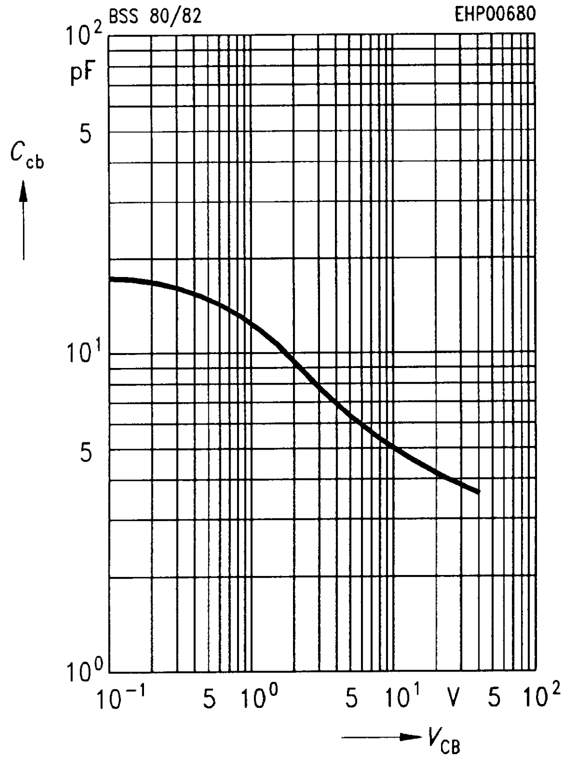
Storage and fall time



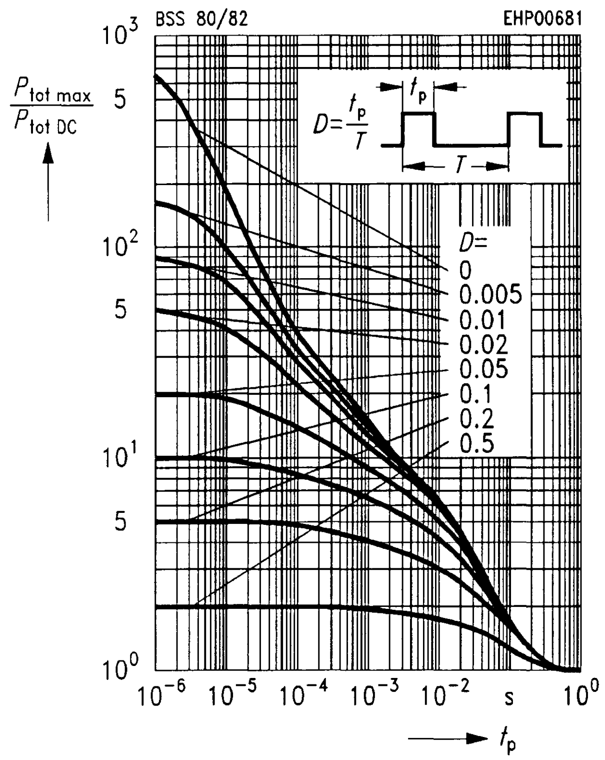
Total power dissipation $P_{tot} = f\,(T_A{}^*;\ T_S)$
* Package mounted on epoxy



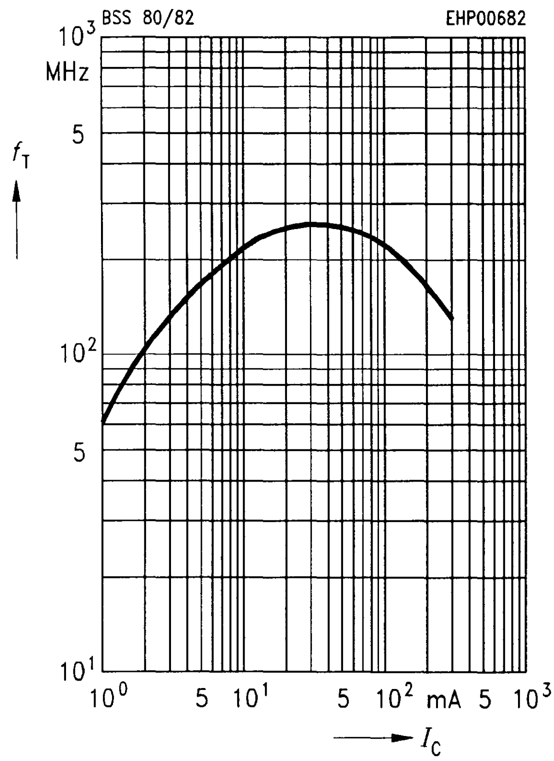
Collector-base capacitance $C_{cb} = f\,(V_{CB})$
f = 1 MHz



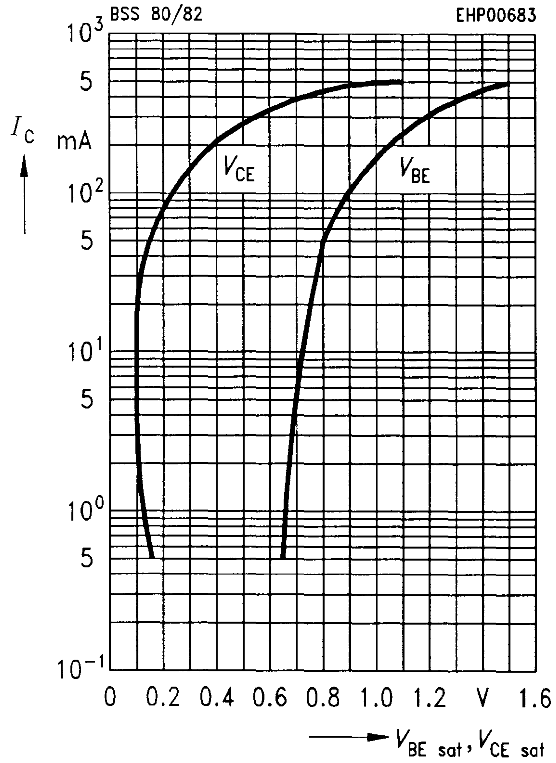
Permissible pulse load $P_{tot\,max}/P_{tot\,DC} = f\,(t_p)$



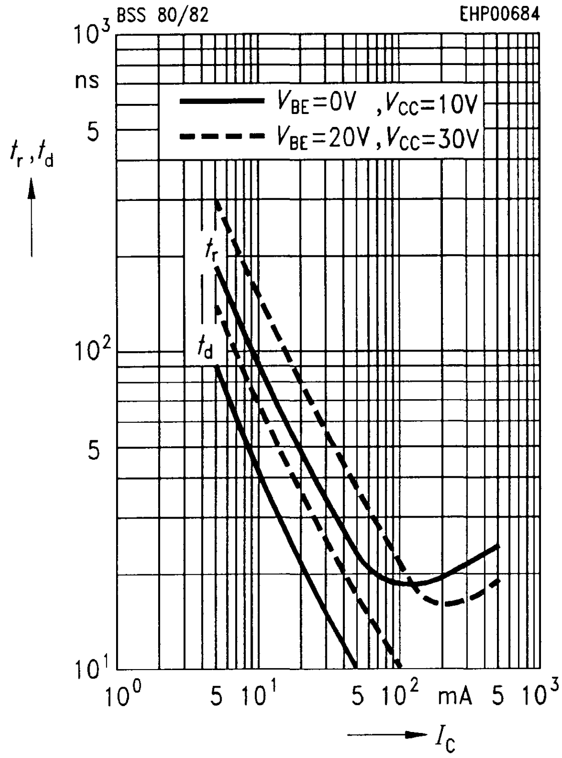
Transition frequency $f_T = f\,(I_C)$
V_{CE} = 20 V



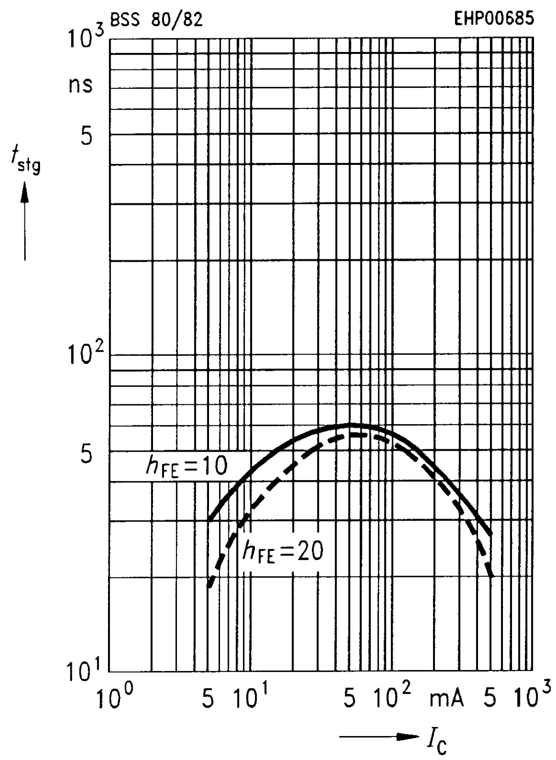
Saturation voltage $I_C = f\,(V_{BE\,sat},\ V_{CE\,sat})$
h_{FE} = 10



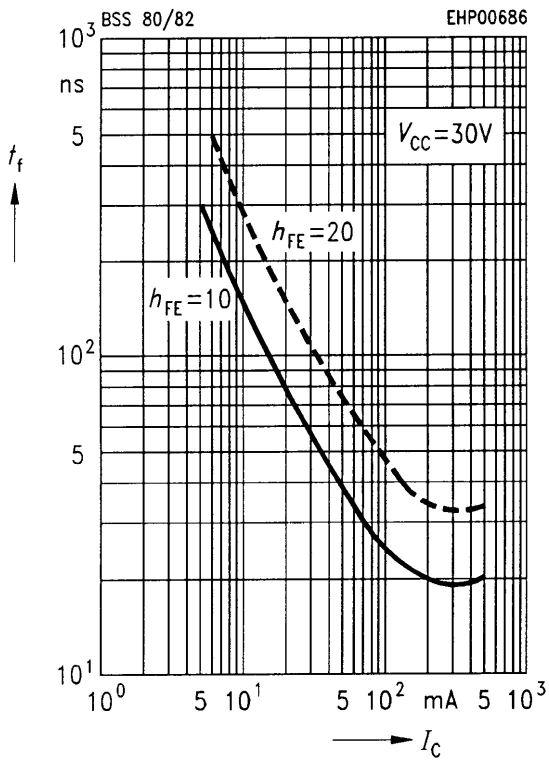
Delay time $t_d = f\,(I_C)$
Rise time $t_r = f\,(I_C)$



Storage time $t_{stg} = f\,(I_C)$



Fall time $t_f = f\,(I_C)$



DC current gain $h_{FE} = f(I_C)$
V_{CE} = 10 V

